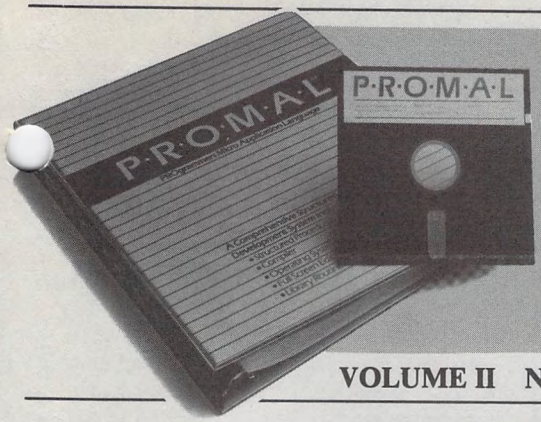


PROMAL™ NEWS
PROgrammer's Micro Application Language

VOLUME II Number 1 Spring, 1987

# IBM PROMAL 2.1 AVAILABLE NOW

**NOW PROMAL 2.1 IS AVAILABLE FOR THE THREE MOST POPULAR COMPUTERS IN HISTORY!**

**A new, advanced version of PROMAL is available for the IBM PC family of computers and compatibles. Some of the major features of the 2.1 version include:**

- Program code size limited only by available memory.
- Microsoft Linker compatible (compiler generates .OBJ files; supports separate compilation/assembly).
- Source-level debugging with Microsoft SYMDEB or equivalent.
- 8087/80287 Math coprocessor support.
- Microsoft compatible libraries (can use LIB, MAKE utilities).
- 32 bit signed LONG data type.
- New Structures (records), user-defined data types.
- Enumerated constants.
- Optionally continue compilation after syntax error.
- New INPUT procedure for formatted or free-format numeric/text input.
- Indirect pointer assignments.
- Improved conditional compilation.
- Specify object library searches in source code.
- Improved cross reference map.
- Compatible with new PROMAL Graphics Toolbox for IBM.

The 2.1 PROMAL compiler is upwardly compatible with previous versions and can compile most source code programs from Apple and Commodore versions without modification.

Although the new version of PROMAL has several powerful new features such as LONG data types and structures, which are not available on the Commodore and Apple II versions, you can specify an option at compile time to issue warnings if you use non-portable features. This allows you to take full benefit of the advanced architecture and larger memory of 16 bit computers such as the IBM PC, while still being able to build applications which are portable to the more modest eight bit machines such as the Commodore 64.

How do data structures work? Here's an example:

```
STRUC COORD   ; Define a type coord...
  INT X       ; as having an X value...
  INT Y       ; and a Y value

WORD I

COORD ORIGIN ; A variable of type COORD
COORD PTS[100] ; And an array...
ORIGIN.X=0     ; Set X coord to 0
ORIGIN.Y=0     ; And Y
...
PTS[I]=ORIGIN ; Structure assignment!
...
IF PTS[I].X < 640 and PTS[I].Y < 200
  PLOT PTS[I] ; Pass structure to sub.
```

With structures you can define new data types as composites of defined data types. You can nest definitions, too, for example:

```
STRUC CIRCLE ; A type called circle...
  COORD CENTER ; has a coord for center
  INT RADIUS   ; And a radius

CIRCLE SUN   ; Variable of type Circle
CIRCLE PLANET[9] ; (6x9= 54 bytes)
...
SUN.CENTER = ORIGIN
...
```

Functions may be defined to return structures, and pointers may be used to access structures. You can also do indirect assignments using pointers:

```
FUNC CIRCLE DISTANCE
...
END
...
I=#PLANET[3]
...
CIRCLE@I=DISTANCE(SUN)
```

The new IBM PROMAL 2.1 manual has a whole new chapter devoted to data structures.

PROMAL 2.1 for IBM is available now, and requires an IBM PC, XT, AT or compatible with one floppy disk, and DOS 2.0 or later. Naturally, full source code is available as an option. Please see the order form for pricing.

# NEW PUBLIC DOMAIN DISKS!

Thanks to a wealth of new PROMAL contributions from our customers, we are now offering Public Domain Disk #3 for Commodore and #3 and #4 for Apple.

Disks #1 and #2 are still available for both Apple and Commodore. We hope to have an IBM public domain disk available by the next Newsletter.

These disks contain contributions by users, which you can freely copy as you wish, subject only to any limitations imposed by the program authors. SMA does not support or endorse these programs, which are supplied "as is". Please do not call or write with questions about the public domain programs; we are only acting as a clearing house for these programs as a service to our customers.

All programs are written in PROMAL and are supplied in source form. Most have documentation files supplied by the author.

A brief summary (by author) is given below. Many authors had several contributed programs. Authors will receive a copy of the public domain disk free.

Good news! We have a price reduction for Public Domain disks. Each disk is only $10, effective May 1, 1987.

**Public Domain Disk #3 for Apple II**

1. Vincent Solomine Jr: Word/Line counting utility; lower case filter; hex <-> decimal converter.
2. Anthony Marsh: Improved X to the Y power function with demo.
3. Lee Gillie: Memory Manager, like Pascal's NEW and DISPOSE functions.
4. RER Software: Fast directory display utility; display on-line drives; print-screen; restore screen; time; numeric to English conversion (e.g. 145 to one-hundred-forty-five).
5. Ray Dosh: Menu-driven printer configuration; hash tables.

**Public Domain Disk #4 for Apple II**

1. Dr. Rolf Henze: PROMAL to C language translator (excluding Library calls).
2. Bruce Carbrey, SMA; file display/searcher; file patch utility.
3. Dave Riedel: Sector/File display/compare utility (ProDOS & DOS 3.3); sort merge utility.
4. Michael Borkum: Blackjack, hangman games; calendar printer; budget planner; checkbook balancing utility.

*/continued page 3*

# The Last Word

With the availability of PROMAL 2.1 for the IBM PC and compatibles we mark a milestone in the evolution of PROMAL.

Now you can develop program source code on any of the three most popular computers in history, and (with some obvious restrictions) have complete portability among these machines.

Notable extensions to PROMAL have been made (see the announcement article) and our performance exceeds Turbo Pascal 3.0 on both compile and execution benchmarks.

Our IBM PROMAL 1.9 initial release is being closed out at $39.95 (60% off) which gives you a super low-cost way to get started with PROMAL on the PC. Remember, however, that 1.9 only generates .EXE files (no linking of separately compiled modules) and 1.9 does not support the Graphics Toolbox.

Now, what if you don't have a PC or compatible and this news is as about as exciting for you as watching paint dry or Apple Pascal compile?

I suggest you go out and buy a PC clone. And I'm not joking. With the new PS/2 announcement from IBM, prices of clones will continue to be competitively low—until the weakness of the U.S. dollar affects offshore prices.

For those of you that perhaps do not follow the clone market here's what you can get.

From **PC's LIMITED** (1-800-426-5150) a "Turbo PC" with 640K, 4.77 or 8MHz 8088-2, graphics adapter, one parallel port, and hi-res monochrome monitor—$799 or $1199 with a 20meg hard disk. PC's LIMITED offers a 30 day return policy and 1 year warranty.

**PC SOURCE** (1-800-643-0992) has a "Turbo-88" with the 8088-2 at 4.77 or 8 MHz, 256K, and 1 floppy (but no monitor) for $495. They also offer a "Starter Kit" with Monitor, 100 cps dot matrix printer, DOS and BASIC for $895. (But no hard disk).

We don't endorse or have an interest in these companies. (I have read some good reports about PC's LIMITED's machines and their service as a direct seller, but we have not purchased from them.)

The exciting thing about the IBM direction with PS/2 is that your investment in PC software and programming (e.g., in PROMAL) will be upwardly compatible with the new 286 and 386 machines.

So, forget the new sofa for the den, go buy a PC clone before the prices go up and then get a copy of PROMAL 2.1. Recompile your stuff and watch it fly. Happy computing!

John R. Segner
President, SMA, Inc.

# 60% OFF CLOSEOUT ON 1.9 IBM PROMAL

Craig, our shipping supervisor, has a problem. With the introduction of PROMAL 2.1 for the IBM, he's got around 200 perfectly good IBM 1.9 versions taking up inventory space in the shipping department.

So we're going to help him and help you too! While supplies last, we'll sell you a copy of IBM PROMAL version 1.9 **complete for only $39.95,** 60% off the regular price of 99.95. Plus, we'll include coupons good for $10 towards the purchase of IBM version 2.1, should you later decide to upgrade. No returns on this special offer, all sales are final.

If you're a Commodore or Apple PROMAL user on a budget, here's a great way to insure you'll be able to port your non-graphic programs to an IBM PC if you need to. For a list of the features that are not included in Version 1.9, see the 2.1 story on page 1. Hurry, this offer is limited to our existing stock!

# SEND A PROGRAM,

We're offering prizes for the best new contributions to our next PROMAL Public Domain Library disks. In addition to the free copy of the disk, which all authors whose works are used receive, we are offering a prize for each of the following categories:

1. Best Apple PROMAL contribution
2. Best Commodore 64 PROMAL contribution
3. Best IBM PROMAL contribution
4. Best all around portable PROMAL contribution.

Each of the winners in these categories will receive a $29.95 locking diskette filing box free! Winners will be judged on the basis of functionality, utility, novelty, quality and effort. Decision of the judges is final.

So come on, you wizards! Let's see what you can do!

# PROGRAMMING TIPS & TECHNIQUES

by Bruce Carbrey, SMA, Inc.

In this issue, PROMAL author Bruce Carbrey answers some of your questions.

**Question: How can I make a "beep" on the speaker of my Apple?**

Answer: Probably the simplest way is to simply PUT an ASCII BEL character ($07), like this:

```
PUT 7 ; "beep!"
```

**Question: On the IBM PC version 2.1 PROMAL, is there a convenient way to tell the Linker to search another directory for the .LIB files?**

Answer: Yes. Use the DOS SET LIB command (which you can put in your AUTOEXEC.BAT file if you wish), for example:

```
SET LIB=C:\PROMAL
```

**Question: On the IBM PC version 2.1 PROMAL, if my current directory is C:\PM and I then use SETPREFIX "A:\\" to a new directory, DIR still shows the contents of C:\PM. How can I fix this?**

Answer: SETPREFIX works just like the CD command (or CHDIR) from DOS. It specifies what the current directory should be for a given drive, but it does not change the current drive. DOS keeps a current directory for each drive. Unfortunately, PROMAL 2.1 doesn't have a built-in Library command to change drives per se, but this is easily done as follows:

```
INCLUDE PROSYS
CON DRIVE_A=0
CON DRIVE_B=1
CON DRIVE_C=2
...
DOSCALL $0E00, DRIVE_A
```

This will select drive A as the current drive (the equivalent of typing A: from the DOS command line).

# Public Domain Disks 1 & 2 Still Available

The first two Public Domain Disks for Commodore and Apple are still available. Below is a listing of the programs that are contained on these first Public Domain disks.

Be sure to check out the story on page 1 about the three new Public Domain disks just released.

**Disk #1 for the Commodore:**

1. Macro Assembler, by C. Martens
2. Disassembler, by Steve Vermeulen
3. Disk Fixer Program, by A. Ryan

**Disk #2 for the Commodore:**

1. Document Formatter Program, by David Long
2. Screen Creator, by Rev. Mike Cargill
3. Print Control Issuer, by Julia Christianson
4. PROMAL Source File Lister, by Garth Ingram
5. Screen Creator, by W.A. Marsh
6. Graphics Routines and Demo, by Roger Norrod
7. Lister Including Time and Date Stamp, by Michael T. Veach
8. C64-to-Tandy PC2 Data Exchange Program, by Steve Vermeulen
9. "Dumb Terminal" Emulation Routine & Demo, by Steve Vermeulen
10. KOALA Touchpad Support, by Erik Vigmostad
11. Counter of Word Occurrences in File, by Erik Vigmostad
12. File Lister for RS-232 Printer, by Erik Vigmostad

**Disk #1 for the Apple**

1. Macro Assembler, by C. Martens
2. Disassembler, by Steve Vermeulen
3. Printer Control Issuer, by Julia Christianson
4. PROMAL Source File Lister, by Garth Ingram
5. Counter of Word Occurrences in File, by Erik Vigmostad

**Disk #2 for the Apple**

1. Document Formatter Program, by David Long

*/from page 1*

**Public Domain Disk #3 for Commodore 64**

1. Anthony Marsh: Improved X to the Y power function; time set/display.
2. Taylor Kline; Relative File DOS bug fixer; Julian date; password security.
3. Kernie Houser: BAM display; disk block status; directory with track/sector display; lock/unlock files; sort directory on disk; undelete file; rename disk volume; improved configurable graphic screen print for Graphics Toolbox.
4. Lee Gillie: Memory Manager, like Pascal's NEW & DISPOSE functions.
5. Dr. Rolf Henze: PROMAL to C language translator (excluding Library calls); disk archiver; selective deletion of files from list.
6. Joe Trindle: Text screen dump; STAR printer commands.
7. Bruce Carbrey & David Long, SMA; Maze builder/solver game (Graphics Toolbox required); file display/search utility; time of day clock.

Please see the order form for pricing.

# GRAPHICS TOOLBOX FOR IBM PROMAL 2.1

As of the writing of this column, the long-awaited PROMAL Graphics Toolbox for the IBM PC is nearing completion, and should be available shortly after you receive this newsletter.

The IBM version of the GTB is very similar to the Commodore and Apple versions. Most graphics programs from these machines will compile and run on the IBM PC with just the addition of a single statement (to select the proper graphics mode).

The GTB for the IBM PC supports the CGA (color graphics adaptor) in medium (320x200) and high (640x200) resolution modes in full color. Drivers for additional color cards are under development, and it is possible to write your own drivers. The package also supports a Microsoft (or compatible) mouse.

If you are not already familiar with the PROMAL Graphics Toolbox, it is a library of functions which you can call to plot points, lines, dashed lines, rectangles, circles, arcs, etc. You can plot text in various sizes and define your own character fonts. You can fill arbitrary areas with color or patterns. High level routines provide multiple graphics windows on screen with auto scaling and clipping using "world" coordinates, similar to the Tektronix TCS package found on many mainframe computers. Screen printing functions are provided for popular printers, in PROMAL source form so they can be adapted for other printers.

Naturally, full source code is available as an option. The Graphics Toolbox for IBM requires PROMAL 2.1 (not version 1.9), and a CGA or equivalent graphics adapter. Please see the order form for pricing.

# BUGS AND SUCH

We've got a few bugs to report, and ways to kill 'em.

1. In the last Newsletter, there was a typo in the listing of the FLOOR function. The line starting with DATA BYTE MASK[] = should end with:

```
$FF,$FE,$FC,$F8,$F0,$E0,$C0,$80
```

2. If you received a copy of Commodore PROMAL 2.1 with a BOOTSCRIPT.J file dated prior to 3/1/87, the "speedup patch" it contains will not work correctly after a NOREAL command or if you use a 1541 Flash. Replace the patch with the following corrected patch:

```
SET 0390 8E A3 0C 20 C6 FF 20 CF FF
SET 0399 20 95 32 B0 10 C9 0D
SET 03A0 F0 12 CC C8 0C B0 EF
SET 03A7 99 E6 41 C8 4C 96 03 20 CC FF
SET 03B1 4C B7 35 20 CC FF 18 4C BC 35
SET 3599 4C 90 03
```

If you have no BOOTSCRIPT.J file for Commodore PROMAL 2.1, you may want to create one with this patch (plus the DATE and FKEY commands), which speeds up compiles by about 40%.

3. Are you getting "Unresolved externals" errors from the DOS Linker? We discovered many of you owners of IBM PROMAL 2.1 do not have version 3.0 or later of the Microsoft Linker, as specified in the PROMAL manual. Earlier linkers have bugs which do not work properly with the LINK commands given in the PROMAL manual. You can work around these bugs by using the following commands instead of simply typing "LINK Filename;" as given in the manual:

```
COPY S_PROMAL.LIB DUMMY.LIB
LINK Filename,,,S_PROMAL+S_MATH6+DUMMY;
```

This will force the Linker to search the S_PROMAL library twice to resolve externals. Alternatively, you can get Microsoft's 3.0 or later Linker, which is bundled with all its language products (such as MASM, the Macro Assembler).

4. If you use Apple PROMAL 2.1 on a IIGS, the 'T' device will not work. This is because Apple made the serial port incompatible with all prior Apple II serial ports, affecting virtually all communications software, not just PROMAL. We hope to have a IIGS version in the future. In the meantime, we have a customer-supplied patch to work around this problem, which we will send you on request.

5. We have reports of problems using the 80287 math coprocessor on a Compaq Deskpro 286. If you have this machine, and are using the coprocessor, please contact SMA for a patch to correct this problem.

6. The IBM PROMAL 2.1 Editor will not successfully FIND a string in the last 240 bytes of a file, due to a very obscure bug (known as a "segment wraparound bug" in the SUBSTR function). You can patch your EDIT.EXE file to fix this symptom, by first using the Editor to prepare a one-line text file called EDPATCH.P as follows:

```
55B6 (FF 0F 3B) F0
```

Then execute the following DOS commands:

```
RENAME EDIT.EXE ED_OLD.EXE
PATCH ED_OLD.EXE EDIT.EXE EDPATCH.P
```

If you get an error message from PATCH, it means that this patch does not apply to your version, so you can forget it.

7. A few defective Commodore and Apple version 2.1 manuals have been discovered. Check the page numbering of the first few pages of Section 3. If the pages are not in order, call SMA. We'll see that you get a new manual at no charge.

8. If you use an MSD dual drive with Commodore 64 PROMAL 2.1, don't compile your object code to drive 1, or it will not be valid and may corrupt a file on drive 0.

# ORDER FORM

## PROMAL Version 2.1 Systems:

☐ PROMAL for IBM - Manual and software, 30-day moneyback satisfaction guarantee. Requires IBM PC, PC jr, XT, AT, etc. or compatible computer, 192K memory, one 5¼ inch floppy (360K) disk drive. (Developer's Version only) ..... **$99.95**

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☐ PROMAL End User System — All features of Developer's System except stand-alone program generation (Executive needed for program execution) for [CHECK ONE] ☐ Apple IIe/IIc ☐ Commodore 64 ..... **$49.95**

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☐ Apple IIe/IIc Developers Upgrade to Version 2.1 (From any earlier Apple End User Version) ..... **$50.00**

## IBM PROMAL 1.9

☐ Version 1.9 of IBM PROMAL. Supply is limited, will be shipped on first-come, first-served basis. All sales are final at this reduced price. See article for details ..... **$39.95**

## PROMAL GRAPHICS TOOLBOX — Fast functions for plotting points, hi-res lines, arcs, etc.; fill shapes; mix text on graphics; windows; image save/recall/print; extensive demo programs, more!

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☐ IBM PC (color, see description in article) ..... **$29.95**

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☐ PROMAL Graphics Toolbox Source (Assembly Language) for [CHECK ONE] ☐Commodore 64 ☐ Apple II ..... **$29.00**

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**PROMAL Public Domain Disks** —see descriptions on page 1

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***Note: Source code sold only to owners of corresponding PROMAL version 2.1 system packages. Please include serial number with order.**

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# CLASSIFIED ADVERTISING:

Now you can reach all registered PROMAL users at a very low cost. If you're developing software or other products that are useful to the PROMAL user community, the PROMAL NEWS is the only way to effectively get your message across.

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To place your ad or insert, call (919) 878-3600 and ask for Peter May. All ads and inserts must be prepaid by check, money order or credit card.

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"Designer Source Creator" will allow you to create PROMAL source code from your screen file. By utilizing template files and keywords it will also allow you to create source code of your own design. Several template files are included which fit a host of situations. One very useful template file is a database file which will allow you to create a database program based on your screen design, with sort, find, add, change, delete, and inquire capabilities built in.

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